

Chapter 17

MUSCULOSKELETAL IMPAIRMENT

Introduction

This chapter provides criteria for assessing permanent impairment from entitled musculoskeletal conditions. The primary function of the musculoskeletal system is the performance of normal body movements with normal strength, speed, co-ordination and endurance to carry out everyday activities.

The chapter is divided into three sections. The first section provides criteria to assess impairment of the upper limbs and musculoskeletal chest conditions. The second section provides criteria to assess impairment of the lower limbs. The third section provides criteria to assess impairment of the spine, pelvis and sacroiliac joints. Each section contains a table to rate osteomyelitis.

Fractures of the bones of the upper and lower limbs that do not involve a joint surface and that have healed without angulation, deformity or shortening, are not considered to cause any permanent impairment and *are assessed at nil*. Similarly, uncomplicated fractures of the clavicle, sternum, scapula and ribs are not considered to cause any permanent impairment and *are assessed at nil*.

Impairment associated with a joint replacement is rated from loss of function criteria and no additional rating is given for the presence of a prosthetic joint.

Peripheral vascular disease is rated within Chapter 13, Hypertension and Vascular Impairment. If amputation occurs as a result of peripheral vascular disease, an additional rating is given using the Amputation Table within this chapter. Ratings from Chapter 13 and the Amputation Table are then **added**.

Varicose vein conditions are rated within Chapter 13, Hypertension and Vascular Impairment. If amputation occurs as a result of varicose vein conditions, a rating is also given using the Amputation Table within this chapter. Ratings from Chapter 13 and the Amputation Table are **compared** and the **highest** selected.

Frostbite, immersion foot and other cold conditions are rated within Chapter 13, Hypertension and Vascular Impairment. If amputation occurs as a result of frostbite, immersion foot and other cold conditions, a rating is also given using the Amputation Table within this chapter. Ratings from Chapter 13 and the Amputation Table are **compared** and the **highest** selected.

Conditions with neurologic involvement that are rated within this chapter include:

- brain injury or disease resulting only in upper or lower limb effects but not both
- spinal cord injury or disease (including central spinal stenosis, but excluding spinal cord injury or disease which affects the function of **both** the upper and lower limbs)
- nerve root compression lesions of the spine
- complex regional pain syndromes Type 1 and Type 2
- compartment syndrome
- thoracic outlet syndrome
- peripheral neurological conditions affecting the limbs which are not rated from **Table 20.5** contained within Chapter 20, Neurological Impairment.

A rating is **not** given from this chapter for the conditions listed below. Each bullet indicates the appropriate chapter to be used.

- Impairment from spinal cord injury or disease which affects the function of both the upper and lower limbs is rated within Chapter 19, Activities of Daily Living.
- Impairment from peripheral vascular conditions is rated within Chapter 13, Hypertension and Vascular Impairment.
- Impairment from pain disorders recognized in the Diagnostic and Statistical Manual of Mental Disorders (DSM) and chronic pain syndrome is rated within Chapter 21, Psychiatric Impairment and Chapter 19, Activities of Daily Living. The ratings are **compared** and the **highest** selected.
- Impairment from musculoskeletal conditions that have global body effects such as rheumatoid arthritis, generalized osteoarthritis and ankylosing spondylitis is rated within Chapter 19, Activities of Daily Living.
- Thoracic outlet syndrome causing vascular impairment only is rated within Chapter 13, Hypertension and Vascular Impairment.
- Impairment from thoracoplasty due to tuberculosis is rated within Chapter 24, Tuberculosis Impairment.

- Impairment from malignant musculoskeletal conditions is rated within Chapter 18, Malignant Impairment. Follow the steps contained within the Malignant Impairment chapter.

Rating Tables and Charts

This chapter contains thirteen “Loss of Function” tables and eight “Other Impairment” tables which may be used to rate entitled musculoskeletal conditions. Six reference charts are also included within this chapter. Five of these charts provide values for the optimal position of an ankylosed joint and the average range of motion of joints. One chart describes nerve root compression effects.

The tables and charts within this chapter are:

Table 17.1	Loss of Function - Upper Limb	This table is used to rate impairment from musculoskeletal conditions which impact on the function of the upper limb as a whole.
Table 17.2	Loss of Function - Upper Limb - Shoulder	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion in the shoulder.
Table 17.3	Loss of Function - Upper Limb - Elbow	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion in the elbow.
Table 17.4	Loss of Function - Upper Limb - Wrist	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion in the wrist.
Table 17.5	Loss of Function - Upper Limb - Thumb and Fingers	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion of the thumb and fingers.
Table 17.6	Other Impairment - Fractures and Miscellaneous Musculoskeletal Conditions Upper Limb and Chest	This table is used to rate impairment from fractures and miscellaneous musculoskeletal conditions of the upper limb and chest.
Table 17.7	Other Impairment - Upper Limb - Amputations	This table is used to rate impairment from upper limb amputations.
Table 17.8	Other Impairment - Osteomyelitis - Upper Limb	This table is used to rate impairment from osteomyelitis of the upper limb.
Table 17.9	Loss of Function - Lower Limb	This table is used to rate impairment from musculoskeletal conditions which impact on the function of the lower limbs as a whole.

Table 17.10	Loss of Function - Lower Limb - Hip	This table is used to rate impairment from musculoskeletal conditions which affect the active range of motion of the hip.
Table 17.11	Loss of Function - Lower Limb - Knee	This table is used to rate impairment from musculoskeletal conditions which affect the active range of motion of the knee.
Table 17.12	Loss of Function - Lower Limb - Ankle	This table is used to rate impairment from musculoskeletal conditions which affect the active range of motion of the ankle.
Table 17.13	Loss of Function - Lower Limb - Feet and Toes	This table is used to rate impairment from musculoskeletal conditions of the feet and toes.
Table 17.14	Other Impairment - Fractures of Lower Limbs	This table is used to rate impairment from fractures of the lower limbs.
Table 17.15	Other Impairment - Lower Limb - Amputations	This table is used to rate impairment from lower limb amputations.
Table 17.16	Other Impairment - Osteomyelitis - Lower Limbs	This table is used to rate impairment from osteomyelitis of the lower limbs.
Table 17.17	Loss of Function - Cervical Spine	This table is used to rate impairment from musculoskeletal conditions affecting the cervical spine.
Table 17.18	Loss of Function - Thoracic Spine	This table is used to rate impairment from musculoskeletal conditions affecting the thoracic spine.
Table 17.19	Loss of Function - Lumbar Spine	This table is used to rate impairment from musculoskeletal conditions affecting the lumbar spine.
Table 17.20	Other Impairment - Coccyx, Pelvis, and Sacroiliac Joints	This table is used to rate impairment from musculoskeletal conditions affecting the coccyx, pelvis and sacroiliac joints.
Table 17.21	Other Impairment - Osteomyelitis - Spine and Pelvis	This table is used to rate impairment from osteomyelitis of the spine and pelvis.
Chart 1	Optimal Position of Joint Ankylosis - Upper Limb	This chart provides values for the optimal position of an ankylosed joint of the upper limb.
Chart 2	Average Range of Joint Motion - Upper Limb	This chart provides values for the average range of motion of specific joints of the upper limb.
Chart 3	Optimal Position of Joint Ankylosis - Lower Limb	This chart provides values for the optimal position of an ankylosed joint of the lower limb.
Chart 4	Average Range of Joint Motion - Lower Limb	This chart provides values for the average range of motion of specific joints of the lower limb.

Chart 5	Average Range of Joint Motion - Spine	This chart provides values for the average range of motion of the spine.
Chart 6	Nerve Root Compression Syndromes	This chart describes nerve root compression effects.

Range of Motion

The loss of function tables in this chapter are based on **active** (independent) range of motion. The active range of all movements in all joints should be recorded in degrees. Range of motion is measured from the anatomical neutral position in all joints with the exception of supination and pronation of the forearm which is measured from the neutral forearm position (mid supination/pronation). Use of a goniometer is preferred; however, visual assessment of degrees of movement is acceptable. Reference charts are provided indicating normal values for range of motion and optimal position of ankylosis of joints.

In any specific joint, certain movements of that joint are considered functionally more important. This functional importance has been considered and is reflected in the rating tables.

Pain

Ratings in the musculoskeletal impairment tables take into account the presence of pain which may accompany the musculoskeletal impairment and that may limit range of motion or function. In the musculoskeletal tables, pain is considered to be a part of many conditions and is considered to be present in most instances beyond minimal levels of impairment. The presence of pain, when introduced at a particular level in a table, is considered to be a distinguishing factor between rating levels. Once pain is identified to exist, it is considered to be present at successive levels.

Osteomyelitis

A rating is determined from the applicable table for each entitled osteomyelitis condition.

Nerve Root Compression Lesions of the Spine and Spinal Cord Injury or Disease

The following instructions are to be followed when determining ratings for nerve root compression lesions of the spine and/or spinal cord injury or disease.

Cervical Spine:

- Nerve root compression lesions due to a cervical spine condition are rated within **Table 17.17** - Loss of Function - Cervical Spine.
- Spinal cord injury or disease at the cervical levels with neurological involvement of the upper limbs is rated within **Table 17.1** - Loss of Function - Upper Limb. If the cervical spine is to be rated, the **Table 17.1** rating is **compared** to the **Table 17.17** - Loss of Function - Cervical Spine rating and the **higher** selected.
- Spinal cord injury or disease at the cervical levels with neurological involvement of **both** the upper and lower limbs is rated within Chapter 19, Activities of Daily Living. If the cervical spine is to be rated, the rating is **compared** to the **Table 17.17** - Loss of Function - Cervical Spine rating and the **highest** selected.

Thoracic Spine:

- Nerve root compression lesions due to a thoracic spine condition are rated on individual merits.
- Spinal cord injury or disease at the thoracic levels with neurological involvement of the upper limbs is rated within **Table 17.1** - Loss of Function - Upper Limb. If the thoracic spine is to be rated, the **Table 17.1** rating is **compared** to the **Table 17.18** - Loss of Function - Thoracic Spine rating and the **highest** selected.
- Spinal cord injury or disease at the thoracic levels with neurological involvement of the lower limbs is rated within **Table 17.9** - Loss of Function - Lower Limb. If the thoracic spine is to be rated, the **Table 17.9** rating is **compared** to the **Table 17.18** - Loss of Function - Thoracic Spine rating and the **highest** selected.
- Spinal cord injury or disease at the thoracic levels with neurological involvement of **both** the upper and lower limbs is rated within Chapter 19, Activities of Daily Living. If the thoracic spine is to be rated, the Chapter 19 rating is **compared** to the **Table 17.18** - Loss of Function - Thoracic Spine rating and the **highest** selected.

Lumbar Spine:

- Nerve root compression lesions due to a lumbar spine condition are rated within **Table 17.19** - Loss of Function - Lumbar Spine.

- Spinal cord injury or disease at the lumbar levels with neurological involvement of the lower limbs is rated within **Table 17.9** - Loss of Function - Lower Limb. If the lumbar spine is to be rated, the **Table 17.9** rating is **compared** to the **Table 17.19** - Loss of Function - Lumbar Spine rating and the **highest** selected.
- Cauda equina syndrome is rated on individual merits.

Section 1

Determining Impairment Assessments of Musculoskeletal Upper Limb and Chest Conditions

When rating impairment of the upper limbs, a higher rating may be appropriate for the dominant upper limb. When applicable, the tables within this section indicate ratings for both the dominant and non-dominant upper limb.

The tables that may be used to rate impairment from musculoskeletal upper limb and chest conditions are:

Table 17.1	Loss of Function - Upper Limb	This table is used to rate impairment from musculoskeletal conditions which impact on the function of the upper limb as a whole.
Table 17.2	Loss of Function - Upper Limb - Shoulder	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion of the shoulder.
Table 17.3	Loss of Function - Upper Limb - Elbow	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion of the elbow.
Table 17.4	Loss of Function - Upper Limb - Wrist	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion of the wrist.
Table 17.5	Loss of Function - Upper Limb - Thumb and Fingers	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion of the thumb and fingers.
Table 17.6	Other Impairment - Fractures and Miscellaneous Musculoskeletal Conditions Upper Limbs and Chest	This table is used to rate impairment from fractures and miscellaneous musculoskeletal conditions of the upper limb and chest.
Table 17.7	Other Impairment - Upper Limb - Amputations	This table is used to rate impairment from upper limb amputations.
Table 17.8	Other Impairment - Osteomyelitis - Upper Limb	This table is used to rate impairment from osteomyelitis of the upper limb.
Chart 1	Optimal Position of Joint Ankylosis - Upper Limb	This chart provides values for the optimal position of an ankylosed joint of the upper limb.
Chart 2	Average Range of Joint Motion - Upper Limb	This chart provides values for the average range of motion of specific joints of the upper limb.

Loss of Function - Upper Limb

Table 17.1 provides criteria for evaluating the ability to use the upper limb as a whole in performing every day activities. Only one rating may be selected for each upper limb. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

This table is used to rate specific conditions which include the following:

- brain injury or disease which affects the function of one or both upper limb(s)
- spinal cord injury or disease which affects the function of one or both upper limb(s)
- complex regional pain syndromes Type 1 and Type 2 of the upper limb(s)
- compartment syndrome of the upper limb(s)
- thoracic outlet syndrome affecting the upper limb(s)
- peripheral neurological conditions affecting the upper limb(s) which are not rated from **Table 20.5** contained within Chapter 20, Neurological Impairment.

In cases of spinal cord injury or disease, refer to the instructions provided in the Introduction of this chapter.

If more than one condition of the same limb is to be rated from **Table 17.1**, the conditions are bracketed for assessment purposes.

When entitled upper limb conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Loss of Function - Upper Limb - Shoulder

Table 17.2 is used to rate impairment from musculoskeletal conditions of the shoulder. Only one rating may be selected for each shoulder. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

If more than one shoulder condition of the same limb is to be rated from **Table 17.2**, the conditions are bracketed for assessment purposes.

When entitled upper limb shoulder conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the

resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Loss of Function - Upper Limb - Elbow

Table 17.3 is used to rate impairment from musculoskeletal conditions of the elbow. Only one rating may be selected for each elbow. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

If more than one elbow condition of the same limb is to be rated from **Table 17.3**, the conditions are bracketed for assessment purposes.

When entitled upper limb elbow conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Loss of Function - Upper Limb - Wrist

Table 17.4 is used to rate impairment from musculoskeletal conditions of the wrist. Only one rating may be selected for each wrist. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

If more than one wrist condition of the same limb is to be rated from **Table 17.4**, the conditions are bracketed for assessment purposes.

When entitled upper limb wrist conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Loss of Function - Upper Limb - Thumb and Fingers

Table 17.5 is used to rate impairment from musculoskeletal conditions of the thumbs and fingers. One rating may be selected for each digit from **Table 17.5**. If more than one rating is applicable for a single digit, the ratings are **compared** and the **highest** selected.

If more than one condition of a single digit is entitled, the conditions are bracketed for assessment purposes.

When entitled upper limb thumb and finger conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Other Impairment - Fractures and Miscellaneous Musculoskeletal Conditions of the Upper Limb and Chest

Table 17.6 is used to rate impairment from fractures and miscellaneous musculoskeletal conditions of the upper limb and chest. One rating may be selected for each entitled condition. If more than one rating is applicable for an entitled condition, the ratings are **compared** and the **highest** selected.

If a fracture is intra-articular, the applicable joint table is also used to rate the impairment.

When entitled fractures and miscellaneous musculoskeletal conditions of the upper limb and chest result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Other Impairment - Upper Limb Amputations

Table 17.7 is used to rate impairment from upper limb amputations.

All amputations of the upper limb, regardless of the cause of the amputation (eg. vascular, trauma or infection), are rated from this table.

When previously entitled conditions are later removed by a newly entitled amputation, the new rating is based on **Table 17.7 - Other Impairment - Upper Limb Amputations**. However, in rare cases, if there is more than one entitled condition of an upper limb, the sum of the ratings could be higher than the amputation rating. In these cases, the ratings for the previously entitled conditions that applied immediately prior to the amputation are to be maintained.

When a non-entitled amputation removes a previously entitled condition(s), the rating for the entitled condition(s) that applied immediately prior to the amputation is to be maintained.

When entitled upper limb amputations result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Other Impairment - Osteomyelitis - Upper Limb

Table 17.8 is used to rate impairment from osteomyelitis of the upper limb. One rating may be selected for each area of osteomyelitis. If more than one rating is applicable for an area, the ratings are **compared** and the **highest** selected.

When entitled osteomyelitis of the upper limb results in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the

resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Table 17.1 - Loss of Function - Upper Limb

Only one rating may be given for each upper limb from **Table 17.1**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.1**, follow the “**ands**” and “**ors**”.

Table 17.1 - Loss of Function - Upper Limb

Dominant Rating	Non-Dominant Rating	Criteria
Nil	Nil	<ul style="list-style-type: none"> Can use limb efficiently for feeding, dressing, writing and other daily tasks.
Two	One	<ul style="list-style-type: none"> Can use limb efficiently for normal tasks but with excessive fatigue and/or pain towards the end of the day; or Has paresthesias and/or numbness.
Four	Two	<ul style="list-style-type: none"> Can use limb efficiently for normal tasks but with excessive fatigue and/or pain occurring within 1 hour.
Nine	Four	<ul style="list-style-type: none"> Can use limb reasonably well in most circumstances but frequent difficulties are manifested by: <ul style="list-style-type: none"> minor loss of digital dexterity causing handwriting changes, or difficulty in manipulation of small or fine objects, e.g. tying shoelaces or setting a watch; or minor loss of grip strength causing difficulty in gripping moderately heavy to heavy objects such as full saucepans, buckets and watering cans; or Can use limb efficiently for normal tasks with excessive fatigue and/or pain occurring within 10 minutes.

Dominant Rating	Non-Dominant Rating	Criteria
Thirteen	Nine	<ul style="list-style-type: none"> • Can use limb reasonably well in most circumstances, but frequent difficulties are manifested by: <ul style="list-style-type: none"> - minor loss of digital dexterity causing handwriting changes, or difficulty in manipulation of small or fine objects e.g. tying shoelaces or setting a watch; <li style="text-align: center;">and - minor loss of grip strength causing difficulty in gripping moderately heavy to heavy objects such as full saucepans, buckets and watering cans.
Twenty-one	Thirteen	<ul style="list-style-type: none"> • Can use limb reasonably well in some circumstances, but with more noticeable difficulty manifested by: <ul style="list-style-type: none"> - moderate loss of digital dexterity causing difficulty in manipulation of larger objects such as turning door handles; and/or - major loss of grip strength causing difficulty in gripping light objects such as knives, forks, cups, toothbrushes, etc.
Thirty-four	Twenty-one	<ul style="list-style-type: none"> • Uses limb inefficiently in all circumstances. Use of limb subject to major limitations; capable of light grip only. Multiple aids may be required for every day activities such as writing and eating.
Thirty-four	Thirty-four	<ul style="list-style-type: none"> • Intractable pain*.
Fifty-two	Thirty-nine	<ul style="list-style-type: none"> • Unable to use limb at all for self-care or daily activities. Limb is essentially useless.

* Intractable pain is severe, persistent, ongoing pain that is unresponsive to the usual treatment modalities.

Steps to Determine the Upper Limb Musculoskeletal Assessment

Step 1: Determine the rating from **Table 17.1** (Loss of Function - Upper Limb).

Note: **Table 17.1** is used to rate specific conditions which include the following:

- brain injury or disease which affects the function of one or both upper limb(s)
- spinal cord injury or disease which affects the function of one or both upper limb(s)
- complex regional pain syndromes Type 1 and Type 2 of the upper limb(s)
- compartment syndrome of the upper limb(s)
- thoracic outlet syndrome affecting the upper limb(s)
- peripheral neurological conditions affecting the upper limb(s) which are not rated from **Table 20.5** contained within Chapter 20, Neurological Impairment.

If more than one entitled upper limb condition in a single limb is to be assessed from **Table 17.1**, the conditions must be bracketed.

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to Step 1 rating.

Step 3: Determine the Quality of Life rating.

Step 4: Add the ratings at Step 2 and Step 3.

Step 5: If partial entitlement exists, apply to rating at Step 4.

This is the Disability Assessment.

Table 17.2 - Loss of Function - Upper Limb - Shoulder

Only one rating may be given for each shoulder from **Table 17.2**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for Table 17.2, follow the “**ands**” and “**ors**”.

Table 17.2 - Loss of Function - Upper Limb - Shoulder

Dominant Rating	Non-dominant Rating	Criteria
Nil	Nil	• Normal range of motion without pain.
Four	Two	• Essentially normal range of motion, but pain now present on a daily basis and/or with movement.
Nine	Four	• Flexion + extension no more than 150°; or • Internal rotation + external rotation no more than 130°; or • Abduction + adduction no more than 175°.
Thirteen	Nine	• Internal rotation + external rotation no more than 50°; and • No abduction beyond 90°.
Twenty-one	Thirteen	• Flexion + extension no more than 40°; and • Internal rotation + external rotation no more than 30°; and • No abduction beyond 60°.
Twenty-six	Twenty-three	• Flexion + extension no more than 20°; and • Internal rotation + external rotation no more than 15°; and • No abduction beyond 25°.
Thirty-four	Twenty-six	• Ankylosis in position of function.
Fifty-two	Forty-five	• Ankylosis in an unfavourable position; or • A flail* joint.

* **Flail joint** is a joint exhibiting abnormal and paradoxical mobility.

Steps to Determine Musculoskeletal Assessment - Shoulder

Step 1: Determine the rating from **Table 17.2** (Loss of Function - Upper Limb-Shoulder).

Note: If more than one shoulder condition in a single upper limb is to be rated, *conditions must be bracketed*.

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.

Step 3: Determine the Quality of Life rating.

Step 4: Add the ratings at Step 2 and 3.

Step 5: If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.3 - Loss of Function - Upper Limb - Elbow

Only one rating may be given for each elbow from **Table 17.3**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.3**, follow the “**ands**” and “**ors**”.

Table 17.3 - Loss of Function - Upper Limb - Elbow

Dominant Rating	Non-dominant Rating	Criteria
Nil	Nil	• Normal range of motion without pain.
Four	Two	• Essentially normal range of motion, but pain now present on a daily basis and/or with movement.
Nine	Four	• No flexion beyond 100°; or • Loss of 10° of extension; or • Pronation plus supination no more than 30°.
Thirteen	Nine	• No flexion beyond 75°; and • Loss of 30° of extension; or • Complete loss of pronation and supination.
Twenty-one	Thirteen	• No flexion beyond 60°; and • Loss of 45° of extension.
Twenty-six	Twenty-three	• Ankylosis in position of function.
Thirty-four	Twenty-six	• Ankylosis in an unfavourable position; or • A flail* joint.

***Flail joint** is a joint exhibiting abnormal and paradoxical mobility.

Steps to Determine the Musculoskeletal Assessment Elbow

Step 1: Determine the rating from **Table 17.3** (Loss of Function - Upper Limb - Elbow).

Note: If more than one entitled elbow condition in a single upper limb is to be rated from **Table 17.3**, conditions must be bracketed.

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.

Step 3: Determine the Quality of Life rating.

Step 4: Add ratings at Step 2 and Step 3.

Step 5: If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.4 - Loss of Function - Upper Limb - Wrist

Only one rating may be given for each wrist from **Table 17.4**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.4**, only one criterion must be met at a level of impairment for that rating to be selected.

Table 17.4 - Loss of Function - Upper Limb - Wrist

Dominant Rating	Non-dominant Rating	Criteria
Nil	Nil	• Normal range of motion without pain.
Four	Two	• Essentially normal range of motion, but pain now present on a daily basis and/or with movement.
Nine	Four	• Palmar flexion no more than 15°; or • Dorsiflexion no more than 25°.
Thirteen	Nine	• Palmar flexion no more than 10°; or • Dorsiflexion no more than 10°.
Eighteen	Twelve	• Ankylosis in position of function.
Twenty-one	Fifteen	• Ankylosis in an unfavourable position; or • A flail* joint.

***Flail joint** is a joint exhibiting abnormal and paradoxical mobility.

Steps to Determine Musculoskeletal Assessment Wrist

Step 1: Determine the rating from **Table 17.4** (Loss of Function - Upper Limb - Wrist).

Note: If more than one entitled wrist condition in a single limb is to be rated from **Table 17.4**, conditions must be bracketed.

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.

Step 3: Determine the Quality of Life rating.

Step 4: Add the ratings at Step 2 and Step 3.

Step 5: If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.5 - Loss of Function - Upper Limb - Thumb and Fingers

Only one rating may be given for each digit from **Table 17.5**. If more than one rating is applicable for a single digit, the ratings are **compared** and the **highest** selected.

Each bullet (•) in **Table 17.5** represents one criterion. In order for a rating to be established for **Table 17.5**, all criteria designated at that rating level must be met.

Table 17.5 - Loss of Function - Thumb and Fingers

THUMB		
Dominant Rating	Non-dominant Rating	Criteria
One	Nil	<ul style="list-style-type: none"> Reduced range of motion and/or painful range of motion of the interphalangeal (IP) joint, and/or of the metacarpophalangeal (MCP) joint and/or of the carpometacarpal (CMC) joint.
Two	One	<ul style="list-style-type: none"> Ankylosis in a favourable position of function of one or two of the following joints: IP, MCP, CMC.
Thirteen	Thirteen	<ul style="list-style-type: none"> Ankylosis in an unfavourable position of function of one or two of the following joints: IP, MCP, CMC; or Ankylosis in a favourable position of function of all of the following joints: IP, MCP, CMC.
Eighteen	Eighteen	<ul style="list-style-type: none"> Ankylosis in an unfavourable position of function of all of the following joints: IP, MCP, CMC.
Index or Middle Finger		
Dominant Rating	Non-dominant Rating	Criteria
One	Nil	<ul style="list-style-type: none"> Reduced range of motion and/or painful range of motion of the distal interphalangeal (DIP) joint, and/or of the proximal interphalangeal (PIP) joint and/or of the metacarpophalangeal (MCP) joint.
Two	One	<ul style="list-style-type: none"> Ankylosis in a favourable position of function of one or two of the following joints: DIP, PIP, MCP.

Five	Three	<ul style="list-style-type: none"> Ankylosis in an unfavourable position of function of one or two of the following joints: DIP, PIP, MCP; or Ankylosis in a favourable position of function of all of the following joints: DIP, PIP, MCP.
Nine	Four	<ul style="list-style-type: none"> Ankylosis in an unfavourable position of function of all of the following joints: DIP, PIP, MCP.
Ring or Little Finger		
Dominant Rating	Non-dominant Rating	Criteria
Nil	Nil	<ul style="list-style-type: none"> Reduced range of motion and/or painful range of motion of the distal interphalangeal (DIP) joint, and/or of the proximal interphalangeal (PIP) joint and/or of the metacarpophalangeal (MCP) joint.
One	Nil	<ul style="list-style-type: none"> Ankylosis in a favourable position of function of one or two of the following joints: DIP, PIP, MCP.
Two	One	<ul style="list-style-type: none"> Ankylosis in an unfavourable position of function of one or two of the following joints: DIP, PIP, MCP; or Ankylosis in a favourable position of function of all of the following joints: DIP, PIP, MCP.
Three	Two	<ul style="list-style-type: none"> Ankylosis in an unfavourable position of function of all of the following joints: DIP, PIP, MCP.

Steps to Determine Musculoskeletal Assessment - Thumb and Fingers

Step 1: Determine the rating from **Table 17.5** (Loss of Function - Upper Limb - Thumb and Fingers).

Note: **One** rating may be selected for **each** digit from **Table 17.5**. However, if more than one condition in a single digit is entitled, the conditions must be bracketed for assessment purposes. The applicable ratings are **compared** and the **highest** selected.

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.

Step 3: Determine the Quality of Life rating.

Step 4: Add the ratings at Step 2 and Step 3.

Step 5: If partial entitlement exists, apply to rating at Step 4.

This is the Disability Assessment.

Table 17.6 - Other Impairment - Fractures and Miscellaneous Musculoskeletal Conditions of the Upper Limb and Chest

Only one rating may be given for each entitled condition from **Table 17.6**. If more than one rating is applicable for an entitled condition, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.6**, only one criterion must be met at a level of impairment for that rating to be selected.

Table 17.6 - Other Impairment - Fractures and Miscellaneous Musculoskeletal Conditions of the Upper Limb and Chest

Rating	Criteria
Nil	<ul style="list-style-type: none"> • Fractures of the sternum, ribs, scapula, clavicle, humerus, ulna, radius, carpal bones, metacarpal bones, and phalanges which are non-articular and well healed, with no deformity, angulation or non-union; or • Costochondral separations.
One	<ul style="list-style-type: none"> • Long head of the biceps tendon rupture; or • Fracture of the clavicle with disfigurement; or • Fracture of the metacarpal bones or phalanges with deformity or angulation.
Two	<ul style="list-style-type: none"> • Costochondritis/Tietze's syndrome with intermittent discomfort/pain.
Three	<ul style="list-style-type: none"> • Fracture of the humerus, radius or ulna with deformity or angulation.
Four	<ul style="list-style-type: none"> • Scapula body fracture with malalignment resulting in painful scapulothoracic crepitus; or • Costochondritis/Tietze's syndrome with persistent discomfort/pain.

Fractures that result in non-union will be assessed on individual merits.

Steps to Determine Assessment - Fractures and Miscellaneous Musculoskeletal Conditions Upper Limb and Chest

- Step 1:** Determine the rating from **Table 17.6** (Other Impairment - Fractures and Miscellaneous Conditions Upper Limb and Chest).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the Quality of Life rating.
- Step 4:** Add the ratings at Step 2 and Step 3.
- Step 5:** If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.7 - Other Impairment - Upper Limb - Amputations

Only one rating may be given for each entitled amputation condition or combination of entitled amputation conditions from **Table 17.6**. If more than one rating is applicable for an entitled condition or combination of entitled amputation conditions, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.7**, only one criterion must be met at a level of impairment for that rating to be selected.

Table 17.7 - Other Impairment - Upper Limb Amputations

Rating	Criteria
Little Finger	
One Two Three	<ul style="list-style-type: none"> • Amputation one phalanx of little finger. • Amputation of two phalanges of little finger. • Amputation of three phalanges of little finger.
Ring Finger	
One Two Four	<ul style="list-style-type: none"> • Amputation of one phalanx of ring finger. • Amputation of two phalanges of ring finger. • Amputation of three phalanges of ring finger.
Middle Finger	
Two Four Nine	<ul style="list-style-type: none"> • Amputation of one phalanx of middle finger. • Amputation of two phalanges of middle finger. • Amputation of three phalanges of middle finger.
Index Finger	
Three Six Nine	<ul style="list-style-type: none"> • Amputation of one phalanx of index finger. • Amputation of two phalanges of index finger. • Amputation of three phalanges of index finger.
Thumb	
Nine Thirteen Eighteen	<ul style="list-style-type: none"> • Amputation of one phalanx. • Amputation of two phalanges of thumb. • Amputation of two phalanges of thumb plus metacarpal.
Other	
Nine	<ul style="list-style-type: none"> • Amputation of ring and little fingers.
Twenty-one	<ul style="list-style-type: none"> • Amputation of index and middle fingers; or • Amputation of middle, ring and little finger.

Other	
Twenty-six	<ul style="list-style-type: none"> • Amputation of index, middle and ring fingers; or • Amputation of thumb and index finger; or • Amputation of thumb and middle finger.
Thirty-four	<ul style="list-style-type: none"> • Loss of two thumbs at MCP joint.
Thirty-nine	<ul style="list-style-type: none"> • Loss of two thumbs with metacarpal bones; or • Amputation of index, middle, ring and little fingers; or • Amputation of thumb, index and middle fingers.
Forty-three	<ul style="list-style-type: none"> • Amputation of thumb, index, middle and ring fingers.
Fifty-two	<ul style="list-style-type: none"> • Amputation of thumb at MCP joint and all fingers; or • Mid-carpal amputation; or • Mid-metacarpal amputation; or • Disarticulation at wrist joint.
Sixty-one	<ul style="list-style-type: none"> • Amputation of forearm from above disarticulation at wrist up to 7.5 cm below the tip of the olecranon process.
Sixty-eight	<ul style="list-style-type: none"> • Amputation of forearm less than 7.5 cm below the tip of the olecranon process to loss of arm below the level of the insertion of the deltoid muscle.
Seventy-one	<ul style="list-style-type: none"> • Amputation above the insertion of the deltoid muscle; or • Disarticulation at shoulder.
Seventy-six	<ul style="list-style-type: none"> • Forequarter* amputation.
Eighty-five	<ul style="list-style-type: none"> • Loss of all fingers (including thumbs), or all but one, on both hands.

***Forequarter amputation** is an amputation of the entire shoulder joint with excision of a portion of the scapula as well as the clavicle.

Amputations not included in this table will be rated on individual merits.

**Steps to Determine Musculoskeletal Assessment
Upper Limb Amputations**

- Step 1:** Determine the rating from **Table 17.7** (Other Impairment - Upper Limb-Amputations).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating(s) at Step 1.
- Step 3:** Determine the Quality of Life rating(s).
- Step 4:** Add the ratings at Step 2 and Step 3.
- Step 5:** If partial entitlement exists, apply to the rating(s) at Step 4.

This is the Disability Assessment.

Table 17.8 - Other Impairment - Osteomyelitis - Upper Limb

One rating may be given for each area of osteomyelitis of the upper limb from **Table 17.8**. If more than one rating is applicable for an area, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.8**, only one criterion must be met at a level of impairment for that rating to be selected.

Table 17.8 - Other Impairment - Osteomyelitis - Upper Limb

Rating	Criteria
One	• Single episode of osteomyelitis arrested with treatment; no residual effects.
Four	• Repeated exacerbations of osteomyelitis in the past 5 years without chronic pain, bone loss, sinus tract formation, or persistent drainage.
Nine	• Chronic osteomyelitis with chronic pain and/or local bone loss.
Thirteen	• Chronic osteomyelitis with sinus tract formation and persistent drainage.

Steps to Determine Osteomyelitis of the Upper Limb

Step 1: Determine the rating from **Table 17.8** (Other Impairment Upper Limb - Osteomyelitis).

Note: One rating may be given for each entitled area of osteomyelitis in the upper limb. The steps must be repeated for each area entitled.

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.

Step 3: Determine the Quality of Life rating.

Step 4: Add the ratings at Step 2 and Step 3.

Step 5: If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Chart 1 - Optimal Position of Ankylosis of Joints - Upper Limb

The following values are a guide. The actual position of a surgical joint ankylosis may vary depending on the judgement of the surgeon taking into account the particular needs and circumstances of the Member/Veteran/Client.

Chart 1 - Optimal Position of Ankylosis of Joints - Upper Limb

Joint	Optimal Position of Ankylosis
Shoulder	Gleno-humeral joint at 45° of abduction with forward elevation of 30° and external rotation of 20°.
Elbow	90 - 100° of flexion.
Wrist	25 - 30° of dorsiflexion without any ulnar or radial deviation.
Thumb IP MCP CMC	20° of flexion. 25° of flexion. The metacarpal in opposition.
Fingers DIP PIP MCP	15 - 20° of flexion. 40 - 50° of flexion. 20 - 30° of flexion.

Chart 2 - Average Range of Joint Motion - Upper Limb

All measurements in Chart 2 below are determined from an anatomical neutral position with the exception of supination and pronation of the forearm which are measured from the mid forearm neutral position.

Chart 2 - Average Range of Joint Motion - Upper Limb

Joint	Movement	Range of Movement
Shoulder	Abduction	180°
	Flexion (forward elevation)	170°
	External rotation	90°
	Adduction	45°
	Extension(backward elevation)	30°
	Internal rotation	90°
Elbow	Flexion	140°
	Supination	80°
	Extension	0°
	Pronation	80°
Wrist	Extension(dorsiflexion)	60°
	Ulnar deviation	30°
	Flexion(palmar flexion)	70°
	Radial deviation	20°
Thumb IP	Flexion	90°
	Extension	20°
MCP	Flexion	50°
	Extension	0°
CMC	Abduction	70°
	Adduction	0°
	Opposition	Thumb to Fingers
Fingers DIP	Flexion	45 - 90°
	Extension	0 - 20°
PIP	Flexion	100°
	Extension	0°
MCP	Flexion	90°
	Extension	30 - 45°

Section 2

Determining Impairment Assessments of Musculoskeletal Lower Limb Conditions

The tables that may be used to rate impairment from musculoskeletal lower limb conditions are:

Table 17.9	Loss of Function - Lower Limbs	This table is used to rate impairment from musculoskeletal conditions which impact on the function of the lower limbs as a whole.
Table 17.10	Loss of Function - Lower Limb - Hip	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion of the hip.
Table 17.11	Loss of Function - Lower Limb - Knee	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion of the knee.
Table 17.12	Loss of Function - Lower Limb - Ankle	This table is used to rate impairment from musculoskeletal conditions affecting the active range of motion of the ankle.
Table 17.13	Loss of Function - Lower Limb - Feet and Toes	This table is used to rate impairment from musculoskeletal conditions of the feet and toes.
Table 17.14	Other Impairment - Fractures of Lower Limbs	This table is used to rate impairment from fractures of the lower limbs.
Table 17.15	Other Impairment - Lower Limb - Amputations	This table is used to rate impairment from lower limb amputations.
Table 17.16	Other Impairment - Osteomyelitis - Lower Limbs	This table is used to rate impairment from osteomyelitis of the lower limbs.
Chart 3	Optimal Position of Joint Ankylosis - Lower Limb	This chart provides values for the optimal position of an ankylosed joint of the lower limb.
Chart 4	Average Range of Joint Motion - Lower Limb	This chart provides values for the average range of motion of specific joints of the lower limb.

Loss of Function - Lower Limb

Table 17.9 provides criteria for evaluating the ability to use the lower limbs as a functional unit for performing every day activities such as walking and standing. Only one rating may be selected for the lower limbs as a unit. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

This table is used to rate specific conditions which include the following:

- brain injury or disease which affects the function of one or both lower limb(s)
- spinal cord injury or disease which affects the function of one or both lower limb(s)
- complex regional pain syndromes Type 1 and Type 2 of the lower limb(s)
- compartment syndrome of the lower limb(s)
- peripheral neurological conditions affecting the lower limb(s) which are not rated from **Table 20.5** contained within Chapter 20, Neurological Impairment.

In cases of spinal cord injury or disease, refer to the instructions provided in the introduction of this chapter.

If more than one condition of the lower limb(s) is to be rated from **Table 17.9**, the conditions are bracketed for assessment purposes.

When entitled lower limb conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Loss of Function - Lower Limb - Hip

Table 17.10 is used to rate impairment from musculoskeletal conditions of the hip. Only one rating may be selected for each hip. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

If more than one hip condition of the same limb is to be rated from **Table 17.10**, the conditions are bracketed for assessment purposes.

When entitled lower limb hip conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Loss of Function - Lower Limb - Knee

Table 17.11 is used to rate impairment from musculoskeletal conditions of the knee. Only one rating may be selected for each knee. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

If more than one knee condition of the same limb is to be rated from **Table 17.11**, the conditions are bracketed for assessment purposes.

When entitled lower limb knee conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Loss of Function - Lower Limb - Ankle

Table 17.12 is used to rate impairment from musculoskeletal conditions of the ankle. Only one rating may be selected for each ankle. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

If more than one ankle condition of the same limb is to be rated from **Table 17.12**, the conditions are bracketed for assessment purposes.

When entitled lower limb ankle conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Loss of Function - Lower Limb - Feet and Toes

Table 17.13 is used to rate impairment from musculoskeletal conditions of the feet and toes. Only one rating may be selected **for each foot** from **Table 17.13**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

If more than one foot and/or toe condition of the same limb is to be rated from **Table 17.13**, the conditions are bracketed for assessment purposes.

When entitled lower limb feet and toe conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Other Impairment - Fractures of Lower Limbs

Table 17.14 is used to rate impairment from fractures of the lower limbs. One rating may be selected for each entitled condition. If more than one rating is applicable for an entitled condition, the ratings are **compared** and the **highest** selected.

If a fracture is intra-articular, the applicable joint table is also used to rate the impairment.

When entitled fractures of the lower limbs result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Table 17.15 - Other Impairment - Lower Limb - Amputations

Table 17.15 is used to rate impairment from lower limb amputations.

All lower limb amputations regardless of the cause (e.g. vascular, trauma, or infection), are rated from this table.

Only one rating may be selected for each lower limb from **Table 17.15**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

When previously entitled conditions are later removed by a newly entitled amputation, the new rating is based on **Table 17.15 - Other Impairment - Lower Limb - Amputations**. However, in rare cases, if there is more than one entitled condition of a lower limb, the sum of the ratings could be higher than the amputation rating. In these cases, the ratings for the previously entitled conditions that applied immediately prior to the amputation are to be maintained.

When entitled lower limb amputations result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

When a non-entitled amputation removes a previously entitled condition(s), the rating for the entitled condition(s) that applied immediately prior to the amputation is to be maintained.

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Table 17.16 - Other Impairment - Osteomyelitis - Lower Limbs

Table 17.16 is used to rate impairment from osteomyelitis of the lower limbs. One rating may be selected for each area of osteomyelitis. If more than one rating is applicable for an area, the ratings are **compared** and the **highest** selected.

When entitled osteomyelitis of the lower limbs result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Table 17.9 - Loss of Function - Lower Limb

Only one rating may be given for the lower limbs as a functional unit from **Table 17.9**. When more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.9**, follow the “**ands**” and “**ors**”.

Table 17.9 - Loss of Function - Lower Limb

Rating	Criteria
Nil	<ul style="list-style-type: none"> Walks in a manner normal for age on a variety of different terrains and at varying speeds.
Two	<ul style="list-style-type: none"> Has paresthesias and/or numbness of one or both legs.
Four	<ul style="list-style-type: none"> Can rise to a standing position unaided and walks at normal pace on flat ground but with intermittent difficulty on steps and uneven ground; or Has intermittent pain of one or both legs.
Nine	<ul style="list-style-type: none"> Walks at a normal pace on flat ground, but has constant difficulty going up and down steps or over uneven ground; or Unable to rise from a sitting position without the assistance of both hands; or Daily pain of one or both legs; or Pain restricts walking to 500 m or less.
Eighteen	<ul style="list-style-type: none"> Walks at reduced pace on flat ground, and requires routine use of a cane or crutch and is unable to manage either stairs or ramps without rails; or Pain restricts walking to 250 m or less.

Rating	Criteria
Twenty-one	<ul style="list-style-type: none"> • Walks at reduced pace on flat ground, and requires routine use of a cane or a crutch; and - one or both legs give way frequently, resulting in falls; or - is unable to negotiate stairs without personal assistance; or • Pain restricts walking to 100 m or less.
Thirty-four	<ul style="list-style-type: none"> • Intractable pain*.
Fifty-two	<ul style="list-style-type: none"> • Restricted to walking in and around home; and - requires quad stick, crutches, pick-up frame or similar walking aid; or - is unable to transfer** without personal assistance.
Eighty-one	<ul style="list-style-type: none"> • Unable to walk or stand. Mobile only in a wheelchair.

* Intractable pain is severe, persistent, ongoing pain that is unresponsive to the usual treatment modalities.

**Transfer means, for example, to move from one seat to another, from sitting to standing, on and off the toilet, in and out of bed.

Steps to Determine the Musculoskeletal Assessment Lower Limb

Step 1: Determine the rating from **Table 17.9** (Loss of Function - Lower Limb)

Note: This table is used to rate specific conditions which include but are not limited to the following:

- brain injury or disease which affects the function of one or both lower limb(s)
- spinal cord injury or disease which affects the function of one or both lower limb(s)
- complex regional pain syndromes Type 1 and Type 2 affecting the lower limb(s).
- compartment syndrome conditions of the lower limb(s)
- peripheral neurological conditions of the lower limb(s) which are not rated from **Table 20.5** contained in Chapter 20, Neurological Impairment.

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.

Step 3: Determine the Quality of Life rating.

Step 4: Add ratings at Step 2 and Step 3.

Step 5: If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.10 - Loss of Function - Lower Limb - Hip

Only one rating may be given for each hip from **Table 17.10**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.10**, follow the “**ands**” and “**ors**”

Table 17.10 - Loss of Function - Lower Limb - Hip

Rating	Criteria
Nil	• Normal range of motion without pain.
Four	• Essentially normal range of motion, but pain now present on a daily basis and/or with movement.
Thirteen	• Loss of about one-quarter normal range of movement.
Twenty-six	• Loss of about one-half normal range of motion.
Thirty-six	• Loss of about three-quarters normal range of motion.
Forty-three	• Ankylosis in position of function.
Fifty-two	• Ankylosis in unfavourable position; or • A flail* joint.

***Flail joint** is a joint exhibiting abnormal and paradoxical mobility.

Steps to Determine the Musculoskeletal Assessment - Hip

- Step 1:** Determine the rating from **Table 17.10** (Loss of Function - Lower Limb - Hip).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the Quality of Life rating.
- Step 4:** Add the ratings at Step 2 and Step 3.
- Step 5:** If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.11 - Loss of Function - Lower Limb - Knee

Only one rating may be given for each knee from Table 17.11. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.11**, only one criterion must be met at a level of impairment for that rating to be selected.

Table 17.11 - Loss of Function - Lower Limb - Knee

Rating	Criteria
Nil	<ul style="list-style-type: none"> • Normal range of motion without pain.
Four	<ul style="list-style-type: none"> • Essentially normal range of motion, but pain now present on a daily basis and/or with movement.
Nine	<ul style="list-style-type: none"> • Intermittent effusions; or • Loss of 15° or more of flexion.
Thirteen	<ul style="list-style-type: none"> • Knee unstable* on clinical exam; or • Loss of 10° of extension; or • Flexion no more than 90°.
Eighteen	<ul style="list-style-type: none"> • Loss of 15° of extension; or <p>Two of the following:</p> <ul style="list-style-type: none"> • Knee unstable* on clinical exam • Loss of 10° of extension • Flexion no more than 90°.
Twenty-six	<p>All three of the following:</p> <ul style="list-style-type: none"> • Knee unstable* on clinical exam • Loss of 10° of extension • Flexion no more than 90°
Thirty-four	<ul style="list-style-type: none"> • Ankylosis in position of function.
Forty-three	<ul style="list-style-type: none"> • Ankylosis in an unfavourable position; or • A flail** joint

A clinically *unstable knee describes a knee joint that is demonstrated to be unstable by a physician on clinical or operative examination.

**Flail joint is a joint exhibiting abnormal and paradoxical mobility.

Steps to Determine the Musculoskeletal Assessment - Knee

- Step 1:** Determine the rating from **Table 17.11** (Loss of Function - Lower Limb - Knee).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the Quality of Life rating.
- Step 4:** Add the ratings at Step 2 and Step 3.
- Step 5:** If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.12 - Loss of Function - Lower Limb - Ankle

Only one rating may be given for each ankle from Table 17.12. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.12**, follow the “**ands**” and “**ors**”.

Table 17.12 - Loss of Function - Ankle

Rating	Criteria
Nil	• Normal range of motion without pain.
Two	• Recurrent sprains of ankle.
Four	• Essentially normal range of motion but pain now present on a daily basis and/or with movement.
Nine	• Dorsiflexion no more than 10°; or • Plantar flexion no more than 15°; or • Ankle unstable* on clinical exam.
Thirteen	• Dorsiflexion no more than 5°; and • Plantar flexion no more than 10°.
Eighteen	• Ankylosis in position of function.
Twenty-six	• Ankylosis in an unfavourable position; or • A flail** joint.

A **clinically *unstable** ankle describes an ankle joint that is demonstrated to be unstable by a physician on clinical or operative examination.

****Flail joint** is a joint exhibiting abnormal and paradoxical mobility.

Steps to Determine the Musculoskeletal Assessment - Ankle

- Step 1:** Determine the rating from **Table 17.12** (Loss of Function - Lower Limb-Ankle).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the Quality of Life rating.
- Step 4:** Add the ratings at Step 2 and Step 3.
- Step 5:** If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.13 - Loss of Function - Lower Limb - Feet and Toes

Table 17.13 is used to rate impairment from musculoskeletal conditions of the feet and toes. Only one rating may be given for each foot from **Table 17.13** for any musculoskeletal condition or combination of conditions. If more than one rating is applicable for a foot, the ratings are **compared** and the **highest** selected.

All conditions listed in **Table 17.13** refer to unilateral conditions.

Conditions rated in **Table 17.13** include, but are not limited to:

- pes planus
- pes cavus
- plantar callus
- hammer toes
- claw toe
- mallet toe
- hallux valgus
- hallux rigidus
- turf toe
- sesamoid dysfunction
- metatarsalgia
- plantar fasciitis
- calcaneal spur
- heel pad syndrome
- subcalcaneal pain syndrome
- retrocalcaneal bursitis
- Morton's neuroma
- tendonitis of the foot including anterior fibular, posterior tibial, flexor hallucis longus and peroneal tendons
- ligamentous injury of the foot
- osteoarthritis of any joint of the foot or toes
- bursitis of the foot
- fractures of the phalanges resulting in ankylosis
- subtalar joint osteoarthritis.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.13**, only one criterion must be met at a level of impairment for that rating to be selected.

Table 17.13 - Loss of Function- Lower Limb - Feet and Toes

Rating	Criteria
Nil	<ul style="list-style-type: none"> • Any included condition with no symptoms; or • Incomplete loss of range of motion of any toe; or • Ankylosis of 2nd, 3rd, 4th or 5th toe in favourable position.
One	<ul style="list-style-type: none"> • Ankylosis in an unfavourable position of one toe (2nd, 3rd, 4th, or 5th).
Two	<ul style="list-style-type: none"> • Any included condition with intermittent symptoms, with or without treatment; or • Ankylosis in an unfavourable position of two toes (2nd, 3rd, 4th, or 5th); or • Ankylosis of IP joint great toe in favourable position; or • Loss of range of motion in the subtalar joint.
Three	<ul style="list-style-type: none"> • Ankylosis in an unfavourable position of three toes (2nd, 3rd, 4th, or 5th).
Four	<ul style="list-style-type: none"> • Any included condition with mild to moderate daily symptoms, with or without treatment; or • Ankylosis in an unfavourable position of four toes (2nd, 3rd, 4th, and 5th); or • Ankylosis of IP joint great toe in unfavourable position; or • Ankylosis of MTP joint great toe in favourable position; or • Ankylosis of subtalar joint in favourable position.
Seven	<ul style="list-style-type: none"> • Ankylosis MTP joint great toe in an unfavourable position; or • Any included condition with persistent, severe symptoms despite regular treatment*.

Ankylosis of the subtalar joint in an unfavourable position of function is rated on individual merits.

***Treatment includes use of orthotic devices and use of medications.**

Steps to Determine the Musculoskeletal Assessment - Feet and Toes

Step 1: Determine the rating from **Table 17.13** (Loss of Function - Lower Limb - Feet and Toes).

Note: If more than one foot and/or toe condition of a single limb is entitled and requires assessment all entitled conditions of that foot are bracketed together. All applicable ratings are **compared** and the **highest** selected.

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.

Step 3: Determine the Quality of Life rating.

Step 4: Add the ratings at Step 2 and Step 3.

Step 5: If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.14 - Other Impairment - Fracture of the Lower Limbs

Only one rating may be given for each entitled condition from **Table 17.14**. If more than one rating is applicable for an entitled condition, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.14**, only one criterion must be met at a level of impairment for that rating to be selected.

Table 17.14 - Other Impairment- Fracture of the Lower Limbs

Rating	Criteria
Nil	<ul style="list-style-type: none"> • Fractures of femur, tibia, fibula, calcaneus, tarsals, metatarsals or phalanges which are non-articular and well healed, with no deformity, angulation or non-union; or • Fractures resulting in shortening of the leg less than 2.5 cm.
One	<ul style="list-style-type: none"> • Fracture of the calcaneus, tarsals or metatarsals with deformity or angulation.
Three	<ul style="list-style-type: none"> • Fracture of the femur, tibia, or fibula with deformity or angulation.
Seven	<ul style="list-style-type: none"> • Fracture resulting in shortening of the leg from 2.5 cm - 7.4 cm.
Thirteen	<ul style="list-style-type: none"> • Fracture resulting in shortening of the leg from 7.5 cm - 13 cm.

Fractures that result in non-union will be assessed on individual merits.

Fractures of the phalanges resulting in ankylosis will be assessed in Table 17.13.

**Steps to Determine Musculoskeletal Assessment
Fractures Lower Limb**

- Step 1:** Determine the rating from **Table 17.14** (Other Impairment - Fractures Lower Limbs).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the Quality of Life rating.
- Step 4:** Add the ratings at Step 2 and Step 3.
- Step 5:** If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.15 - Other Impairment - Lower Limb - Amputations

Table 17.15 is used to rate impairment from lower limb amputations.

Only one rating may be given for each lower limb from **Table 17.15** for entitled amputations. If more than one rating is applicable, the ratings are **compared** and the **highest** is selected.

Each bullet (•) in **Table 17.15** represents one criterion. Only one criteria must be met at a particular level in **Table 17.15** in order for that rating to be selected.

Table 17.15 - Other Impairment - Lower Limb Amputations

Rating	Criteria
Two	• Amputation at DIP, PIP or MTP joint of a single toe other than the great toe.
Four	• Amputation at IP joint great toe. • Amputation of 2 to 4 toes on foot excluding the great toe.
Seven	• Amputation of the great toe.
Thirteen	• Amputation of the great toe and one other toe on one foot.
Eighteen	• Amputation of the great toe and 2 or more other toes on one foot; or • Mid-metatarsal amputation.
Twenty-six	• Mid-tarsal amputation.
Forty-three	• Amputation at the ankle; or • Amputation below the knee with stump of 11.5 cm or greater.
Fifty-two	• Amputation below the knee with stump of less than 11.5 cm; or • Amputation through the knee joint.
Sixty-one	• Amputation above the knee (lower 1/3 of thigh).
Sixty-three	• Amputation above the knee (middle 1/3 of thigh).
Sixty-eight	• Amputation above the knee (upper 1/3 of thigh).
Seventy-six	• Disarticulation at the hip joint; or • Hind quarter* amputation; or • Hemipelvectomy.

***Hind quarter amputation is an amputation of the entire hip joint as well as a portion of the pubic rami and a portion of the ischial tuberosity.**

Amputations not included in this table will be rated on individual merits.

**Steps to Determine Musculoskeletal Assessment -
Lower Limb Amputations**

- Step 1:** Determine the rating from **Table 17.15** (Other Impairment - Lower Limb - Amputations).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the Quality of Life rating.
- Step 4:** Add the ratings at Step 2 and Step 3.
- Step 5:** If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Table 17.16 - Other Impairment - Osteomyelitis - Lower Limb

One rating may be given for each area of osteomyelitis of the lower limb from **Table 17.16**. If more than one rating is applicable for an area, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.16**, only one criterion must be met at a level of impairment for that rating to be selected.

Table 17.16 - Other Impairment - Osteomyelitis - Lower Limb

Rating	Criteria
One	• Single episode of osteomyelitis arrested with treatment; no residual effects.
Four	• Repeated exacerbations of osteomyelitis in the past 5 years without chronic pain, bone loss, sinus tract formation, or persistent drainage.
Nine	• Chronic osteomyelitis with chronic pain and/or local bone loss.
Thirteen	• Chronic osteomyelitis with sinus tract formation and persistent drainage.

Steps to Determine the Lower Limb Osteomyelitis Assessment

Step 1: Determine the rating from **Table 17.16** (Other Impairment - Lower Limb Osteomyelitis).

Note: One rating may be given for each entitled area of osteomyelitis of the lower limbs. The steps must be repeated for each area entitled.

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.

Step 3: Determine the Quality of Life rating.

Step 4: Add the ratings at Step 2 and Step 3.

Step 5: If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Chart 3 - Optimal Position of Joint Ankylosis - Lower Limb

The following values are a guide. The actual position of a surgical joint ankylosis may vary depending on the judgement of the surgeon taking into account the particular needs and circumstances of the Member/Veteran/Client.

Chart 3 - Optimal Position of Joint Ankylosis - Lower Limb

Joint	Optimal Position of Ankylosis
Hip	25 - 30° of flexion, 0 - 10° external rotation, 2 - 5° of adduction.
Knee	10 - 15° flexion with good alignment.
Ankle	The neutral position without flexion, extension, varus or valgus.

Chart 4 - Average Range of Motion of Joints - Lower Limb**Chart 4 - Average Range of Motion of Joints - Lower Limb**

Hip	Flexion	120°
	Abduction	40°
	Internal rotation	30°
	Extension	30°
	Adduction	20°
	External rotation	45°
Knee	Flexion	130°
	Extension	0°
Ankle	Dorsiflexion	25°
	Inversion	30°
	Plantar flexion	40°
	Eversion	20°

Section 3

Determining Impairment Assessments of Musculoskeletal Spine, Pelvis and Sacroiliac Joints

The tables that may be used to rate impairment from musculoskeletal spine, pelvis and sacroiliac joint conditions are:

Table 17.17	Loss of Function - Cervical Spine	This table is used to rate impairment from musculoskeletal conditions affecting the cervical spine.
Table 17.18	Loss of Function - Thoracic Spine	This table is used to rate impairment from musculoskeletal conditions affecting the thoracic spine.
Table 17.19	Loss of Function - Lumbar Spine	This table is used to rate impairment from musculoskeletal conditions affecting the lumbar spine.
Table 17.20	Other Impairment - Coccyx, Pelvis and Sacroiliac Joints	This table is used to rate impairment from musculoskeletal conditions affecting the coccyx, pelvis and sacroiliac joints.
Table 17.21	Other Impairment - Osteomyelitis - Spine and Pelvis.	This table is used to rate impairment from osteomyelitis of the spine and pelvis.
Chart 5	Average Range of Joint Motion - Spine	This chart is used as a reference with regard to the average range of motion of the cervical, thoracic and lumbar spine.
Chart 6	Nerve Root Compression Syndromes	This chart describes nerve root compression effects.

Loss of Function - Cervical Spine

Table 17.17 is used to rate impairment from musculoskeletal conditions of the cervical spine. Only one rating may be selected from **Table 17.17**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

If more than one cervical condition is to be rated from **Table 17.17**, the conditions are bracketed for assessment purposes.

Nerve root compression lesions of the cervical spine are rated from this table.

In cases where a spinal cord injury or disease is to be rated, refer to the instructions provided in the Introduction of this chapter.

When entitled cervical spine conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Loss of Function - Thoracic Spine

Table 17.18 is used to rate impairment from musculoskeletal conditions of the thoracic spine. Only one rating may be selected from **Table 17.18**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

If more than one thoracic spine condition is to be rated from **Table 17.18**, the conditions are bracketed for assessment purposes.

Nerve root compression lesions due to a thoracic spine condition are rated on individual merits.

In cases where a spinal cord injury or disease is to be rated, refer to the instructions provided in the Introduction of this chapter.

When entitled thoracic spine conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Loss of Function - Lumbar Spine

Table 17.19 is used to rate impairment from musculoskeletal conditions of the lumbar spine. Only one rating may be selected from **Table 17.19**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

If more than one lumbar spine condition is to be rated from **Table 17.19**, the conditions are bracketed for assessment purposes.

Nerve root compression lesions of the lumbar spine are rated from this table.

In cases where a spinal cord injury or disease is to be rated, refer to the instructions provided in the introduction of this chapter.

When entitled lumbar spine conditions result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Other Impairment - Coccyx, Pelvis and Sacroiliac Joint Conditions

Table 17.20 is used to rate musculoskeletal impairment from coccyx, pelvis, and sacroiliac joint conditions. A rating may be given from **Table 17.20** for **each** entitled area. If more than one rating is applicable for an area, the ratings are **compared** and the **highest** selected.

For purposes of assessment, sacroiliac joint disease is considered to be bilateral.

When entitled conditions of the coccyx, pelvis and sacroiliac joint result in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Other Impairment - Osteomyelitis - Spine and Pelvis

Table 17.21 is used to rate impairment from osteomyelitis of the spine and pelvis. One rating may be selected for each area of osteomyelitis. If more than one rating is applicable for an area, the ratings are **compared** and the **highest** selected.

When entitled osteomyelitis of the spine and pelvis results in permanent impairment of other organ systems, a consequential entitlement decision is required. If awarded, the resulting impairment of that organ system(s) will be rated using the applicable body system specific table(s).

If non-entitled conditions or conditions rated within another chapter/table of the Table of Disabilities are contributing to the overall impairment, then the Partially Contributing Table (PCT) must be applied to arrive at the rating which is due to the entitled condition(s) rated within this table.

Table 17.17 - Loss of Function - Cervical Spine

Only one rating may be given for the cervical spine from **Table 17.17**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.17** follow the “**ands**” and “**ors**”.

Table 17.17 - Loss of Function - Cervical Spine

Rating	Criteria
Nil	<ul style="list-style-type: none"> • Normal range of motion without pain; and • No radicular pain; and • No nerve root compression signs.
Four	<ul style="list-style-type: none"> • Essentially normal range of motion, but pain now present on a daily basis and/or with movement.
Nine	<ul style="list-style-type: none"> • Loss of up to ½ range of motion; or • Intermittent radicular pain.
Thirteen	<ul style="list-style-type: none"> • Loss equal to or greater than ½ range of motion; or • One of the following nerve root compression signs are present in the upper limbs: <ul style="list-style-type: none"> - Significant asymmetry of relevant reflex(es) - Sensory loss in dermatomal pattern - Relevant loss of muscle strength.
Eighteen	<ul style="list-style-type: none"> • Radicular pain occurring at least weekly; or • Two of the following nerve root compression signs are present in the upper limbs: <ul style="list-style-type: none"> - Significant asymmetry of relevant reflex(es) - Sensory loss in dermatomal pattern - Relevant loss of muscle strength.
Twenty-one	<ul style="list-style-type: none"> • All of the following nerve root compression signs are present in the upper limbs: <ul style="list-style-type: none"> - Significant asymmetry of relevant reflex(es) - Sensory loss in dermatomal pattern - Relevant loss of muscle strength.
Twenty-six	<ul style="list-style-type: none"> • Ankylosis in a position of function.
Thirty-four	<ul style="list-style-type: none"> • Intractable pain*; or • Ankylosis in an unfavourable position of function.

* Intractable pain is severe, persistent, ongoing pain that is unresponsive to the usual treatment modalities.

**Steps to Determine the Assessment for Musculoskeletal
Cervical Spine Conditions
(Nerve Root Compression Only, e.g. C5, C6, C7 and C8)**

- Step 1:** Determine the rating from **Table 17.17** (Loss of Function - Cervical Spine).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the Quality of Life rating.
- Step 4:** Add the ratings at Step 2 and Step 3.
- Step 5:** If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

**Steps to Determine the Assessment for Musculoskeletal
Cervical Spine Conditions
(Spinal Cord Injury or Disease - Upper Limb Involvement Only)**

Step 1: Determine the rating from **Table 17.17** (Loss of Function - Cervical Spine).

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.

Step 3: Determine a rating from **Table 17.1** (Loss of Function - Upper Limb).

Note: If **one** upper limb is affected, determine a rating for the affected limb.

or

If **both upper limbs** are affected, determine the appropriate rating for each limb and **add** the ratings.

Step 4: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 3.

Step 5: **Compare** Step 2 and Step 4 and select the **highest**.

Step 6: Determine the Quality of Life rating.

Step 7: Add the ratings at Step 5 and Step 6.

Step 8: If partial entitlement exists, apply to the rating at Step 7.

This is the Disability Assessment.

**Steps to Determine the Assessment for Musculoskeletal
Cervical Spine Conditions
(Spinal Cord Injury or Disease - Upper and Lower Limb Involvement)**

- Step 1:** Determine the rating from **Table 17.17** (Loss of Function - Cervical Spine).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1 .
- Step 3:** Determine a rating from Chapter 19 (Activities of Daily Living).
- Step 4:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 3.
- Step 5:** **Compare** Step 2 and Step 4 and select the **highest**.
- Step 6:** Determine the Quality of Life rating.
- Step 7:** Add the ratings at Step 5 and Step 6.
- Step 8:** If partial entitlement exists, apply to the rating at Step 7.

This is the Disability Assessment.

Table 17.18 - Loss of Function - Thoracic Spine

Only one rating may be given for the thoracic spine from **Table 17.18**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.18** all criteria designated at that rating level must be met.

Table 17.18 - Loss of Function - Thoracic Spine

Rating	Criteria
Nil	• Normal range of motion without pain.
One	• Essentially normal range of motion, but pain now present on a daily basis and/or with movement.
Two	• Loss of up to ½ range of motion.
Three	• Loss equal to or greater than ½ range of motion.
Nine	• Ankylosis in a position of function.
Thirteen	• Ankylosis in an unfavourable position of function.

Note: In rating the thoracic spine, one should concentrate on the rotation movements as opposed to flexion and extension movements which are primarily a function of the lumbar spine.

Nerve root compression lesions of the thoracic spine will be rated on individual merits.

**Steps to Determine Musculoskeletal Thoracic Spine Assessment
(Nerve Root Compression Only)**

- Step 1:** Determine the rating from **Table 17.18** (Loss of Function -Thoracic Spine).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the Quality of Life rating.
- Step 4:** Add ratings at Step 2 and Step 3.
- Step 5:** If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

**Steps to Determine the Musculoskeletal
Thoracic Spine Assessment
(Spinal Cord Injury or Disease - Upper Limb Involvement Only)**

- Step 1:** Determine the rating from **Table 17.18** (Loss of Function -Thoracic Spine).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the rating(s) from **Table 17.1** (Loss of Function - Upper Limbs).
- Note:** If **one** upper limb is affected, determine a rating for the affected limb.
or
If **both upper limbs** are affected, determine the appropriate rating for each limb and **add** the ratings.
- Step 4:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 3.
- Step 5:** **Compare** ratings at Step 2 and Step 4 and select the **highest**.
- Step 6:** Determine the Quality of Life rating
- Step 7:** Add ratings at Step 5 and Step 6.
- Step 8:** If partial entitlement exists, apply to the rating at Step 7.

This is the Disability Assessment.

**Steps to Determine the Musculoskeletal
Thoracic Spine Assessment
(Spinal Cord Injury or Disease - Lower Limb Involvement Only)**

- Step 1:** Determine the rating from **Table 17.18** (Loss of Function -Thoracic Spine).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the rating(s) from **Table 17.9** (Loss of Function - Lower Limbs).
- Step 4:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 3.
- Step 5:** **Compare** ratings at Step 2 and Step 4 and select the **highest**.
- Step 6:** Determine the Quality of Life rating.
- Step 7:** Add ratings at Step 5 and Step 6.
- Step 8:** If partial entitlement exists, apply to the rating at Step 7.

This is the Disability Assessment.

**Steps to Determine Musculoskeletal
Thoracic Spine Assessment
(Spinal Cord Injury or Disease - Upper and Lower Limb Involvement)**

- Step 1:** Determine the rating from **Table 17.18** (Loss of Function -Thoracic Spine).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine rating from Chapter 19 (Activities of Daily Living).
- Step 4:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 3.
- Step 5:** **Compare** Step 2 and Step 4 ratings and select the **highest**.
- Step 6:** Determine the Quality of Life rating.
- Step 7:** Add ratings at Step 5 and Step 6.
- Step 8:** If partial entitlement exists, apply to the rating at Step 7.

This is the Disability Assessment.

Table 17.19 - Loss of Function - Lumbar Spine

Only one rating may be given for the lumbar spine from **Table 17.19**. If more than one rating is applicable, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.19**, follow the “**ands**” and “**ors**”.

Table 17.19 - Loss of Function - Lumbar Spine

Rating	Criteria
Nil	<ul style="list-style-type: none"> • Normal range of motion without pain; and • No sciatica*; and • No nerve root compression signs.
Four	<ul style="list-style-type: none"> • Essentially normal range of motion, but pain now present on a daily basis and/or with movement.
Nine	<ul style="list-style-type: none"> • Loss of up to ½ range of motion; or • Intermittent sciatica*.
Thirteen	<ul style="list-style-type: none"> • Loss equal to or greater than ½ range of motion; or • One of the following nerve root compression signs are present in the lower limbs: <ul style="list-style-type: none"> - Significant asymmetry of relevant reflex(es) - Sensory loss in dermatomal pattern - Relevant loss of muscle strength.
Eighteen	<ul style="list-style-type: none"> • Sciatica* occurring at least weekly; or • Two of the following nerve root compression signs are present in the lower limbs: <ul style="list-style-type: none"> - Significant asymmetry of relevant reflex(es) - Sensory loss in dermatomal pattern - Relevant loss of muscle strength.
Twenty-one	<ul style="list-style-type: none"> • Sciatica* occurring on most days; or • All of the following nerve root compression signs are present in the lower limbs: <ul style="list-style-type: none"> - Significant asymmetry of relevant reflex(es) - Sensory loss in dermatomal pattern - Relevant loss of muscle strength.
Thirty-one	<ul style="list-style-type: none"> • Ankylosis in a position of function.
Thirty-four	<ul style="list-style-type: none"> • Intractable pain**.
Thirty-nine	<ul style="list-style-type: none"> • Ankylosis in an unfavourable position of function.

* Sciatica is defined as pain radiating in the distribution of a lumbar or sacral dermatome, below the level of the knee with or without associated neurosensory and motor deficits.

**Intractable pain is severe, persistent, ongoing pain that is unresponsive to the usual treatment modalities.

**Steps to Determine the Assessment for
Musculoskeletal Lumbar Spine
(Nerve Root Compression Only, e.g. L4, L5 and S1)**

- Step 1:** Determine the rating from **Table 17.19** (Loss of Function - Lumbar Spine).
- Step 2:** Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.
- Step 3:** Determine the Quality of Life rating.
- Step 4:** Add ratings at Step 2 and Step 3.
- Step 5:** If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

**Steps to Determine the Assessment for
Musculoskeletal Lumbar Spine
(Spinal Cord Injury or Disease - Lower Limb Involvement)**

Step 1: Determine the rating from **Table 17.19** (Loss of Function - Lumbar Spine).

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 1.

Step 3: Determine rating from **Table 17.9** (Loss of Function - Lower Limb(s) (if applicable)).

Note: If an entitled lumbar spinal cord injury or disease condition affects the function of one or both lower limbs, a rating is necessary from **Table 17.9** (Loss of Function - Lower Limb). Regardless if one or both lower limbs are affected, the appropriate rating from **Table 17.9** is **compared** to the **Table 17.19** rating and the **highest** selected.

Step 4: Does the Partially Contributing Table apply? If **yes**, then apply to rating at Step 3.

Step 5: **Compare** the Step 2 and Step 4 ratings and select the **highest**.

Step 6: Determine the Quality of Life rating.

Step 7: Add ratings at Step 5 and Step 6.

Step 8: If partial entitlement exists, apply to the rating at Step 7.

This is the Disability Assessment.

Table 17.20 - Other Impairment - Coccyx, Pelvis and Sacroiliac Joints

Only one rating may be given from **Table 17.20** for each of the following areas: coccyx, pelvis and sacroiliac joints. For purposes of assessment, sacroiliac joint disease is considered to be bilateral. If more than one rating is applicable for an area, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.20**, only one criterion must be met at a level of impairment for that rating to be selected.

Table 17.20 - Other Impairment - Coccyx, Pelvis and Sacroiliac Joints

Rating	Criteria
Nil	<ul style="list-style-type: none"> • Asymptomatic; healed bone graft donor site; or • Asymptomatic; healed pelvic fracture with or without displacement; or • Asymptomatic; sacroiliac joint(s) disease; or • Asymptomatic; nonunion, malunion or excision of coccyx.
One	<ul style="list-style-type: none"> • Bone graft donor site with pain.
Four	<ul style="list-style-type: none"> • Healed pelvic fracture with displacement and intermittent symptoms; or • Sacroiliac joint disease with tenderness on palpation of sacroiliac joint(s) and intermittent symptoms; or • Nonunion, malunion or excision of coccyx with intermittent symptoms.
Seven	<ul style="list-style-type: none"> • Sacroiliac joint disease with tenderness on palpation of sacroiliac joint(s) and persistent symptoms; or • Nonunion, malunion or excision of coccyx with persistent symptoms.
Thirteen	<ul style="list-style-type: none"> • Healed pelvic fracture with displacement and persistent symptoms.
Thirty-four	<ul style="list-style-type: none"> • Pelvic fracture(s) resulting in intractable pain*.

* Intractable pain is severe, persistent, ongoing pain that is unresponsive to the usual treatment modalities.

Steps to Determine the Musculoskeletal Assessment Coccyx, Pelvis and Sacroiliac Joint(s)

Step 1: Determine the rating from **Table 17.20** (Other Impairment - Coccyx, Pelvis and Sacroiliac joint[s]).

Note: **One** rating is selected from **Table 17.20** for each entitled condition of the coccyx and pelvis.

One rating is selected from **Table 17.20** for entitled conditions of the sacroiliac joints regardless of whether the condition is unilateral or bilateral.

The steps must be repeated for each area entitled.

Step 2: Does the Partially Contributing Table apply? If **yes**, apply to the rating(s) at Step 1.

Step 3: Determine the Quality of Life rating(s).

Step 4: Add ratings at Step 2 and Step 3.

Step 5: If partial entitlement exists, apply to the rating(s) at Step 4.

This is the Disability Assessment.

Table 17.21 - Other Impairment - Osteomyelitis - Spine and Pelvis

Only one rating may be given from **Table 17.21** for each area of osteomyelitis affecting the spine and pelvis. If more than one rating is applicable for an area, the ratings are **compared** and the **highest** selected.

Each bullet (•) represents one criterion. In order for a rating to be established for **Table 17.21**, all criteria designated at that rating level must be met.

Table 17.21 - Other Impairment - Osteomyelitis - Spine and Pelvis

Rating	Criteria
One	• Single episode of osteomyelitis arrested with treatment; no residual effects.
Four	• Repeated exacerbations of osteomyelitis in the past 5 years without progression to discharging sinus, local bone loss and/or chronic pain.
Nine	• Chronic osteomyelitis with local bone loss and/or chronic pain.
Thirteen	• Chronic osteomyelitis with sinus tract formation and persistent drainage.

**Steps to Determine Assessment from
Osteomyelitis - Spine and Pelvis**

Step 1: Determine the rating from **Table 17.21** (Other Impairment -Osteomyelitis - Spine and Pelvis).

Note: One rating may be given for each entitled area of osteomyelitis of the spine and pelvis.

The steps must be repeated for each area entitled.

Step 2: Does the Partially Contributing Table apply? If **yes**, then apply to the rating at Step 1.

Step 3: Determine the Quality of Life rating.

Step 4: Add the ratings at Step 2 and Step 3 .

Step 5: If partial entitlement exists, apply to the rating at Step 4.

This is the Disability Assessment.

Chart 5 - Average Range of Joint Motion - Spine**Chart 5 - Average Range of Joint Motion - Spine**

Joint	Movement	Range of Movement
Cervical Spine	Flexion	60°
	Right lateral flexion	45°
	Right rotation	70°
	Extension	60°
	Left lateral flexion	45°
	Left rotation	70°
Thoraco-lumbar Spine*	Flexion	90°
	Right lateral flexion	35°
	Right rotation	35°
	Extension	30°
	Left lateral flexion	35°
	Left rotation	35°

*As a general rule each thoracic vertebrae contributes to about 3 degrees of flexion ($3 \times 12 = 36$ degrees total flexion due to the thoracic spine) and each lumbar vertebrae to about 9 degrees of flexion ($9 \times 5 = 45$ degrees total flexion due to lumbar spine) for a total flexion of the thoracolumbar spine of 81 degrees.

Chart 6 - Nerve Root Compression Syndromes

This chart provides a description of the common findings associated with nerve root compression syndromes at the cervical and lumbar spine levels.

Chart 6 - Nerve Root Compression Syndromes

Nerve Root	Nerve Root Compression Effects
C5 Root Compression Syndrome	Weakness of shoulder abduction and elbow flexion. Loss of biceps reflex. Sensory loss over the lateral aspect of the upper arm.
C6 Root Compression Syndrome	Weakness of elbow flexion. Weak biceps reflex. Sensory loss over the radial (lateral) aspect of the forearm and the thumb.
C7 Root Compression Syndrome	Weakness of elbow extension. Loss of triceps reflex. Sensory loss over dorsal aspect of arm and forearm and of middle finger.
C8 Root Compression Syndrome	Weakness of finger flexion. Sensory loss over the ulnar (medial) aspect of the forearm and of the ring and little fingers.
L4 Root Compression Syndrome	Weakness of knee extension. Weakness of patellar/knee jerk reflex. Sensory loss over medial aspect of the lower leg, particularly the area above medial malleolus.
L5 Root Compression Syndrome	Weakness of ankle dorsiflexion and extension of great toe. Heel walking is impaired. Weakness of hip abduction. Trendelenburg test may be positive. Sensory loss over lateral aspect of the lower leg and the medial aspect of the dorsum of the foot.
S1 Root Compression Syndrome	Weakness of plantar flexion of the ankle. Toe walking is impaired. Weakness of gluteus maximus. Hip extension is impaired. Weakness of Achilles/ankle jerk reflex. Sensory loss over the posterolateral aspect of the thigh and leg and the lateral aspect of the foot.